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JAVA AND THE JAVANESE.

FROM the steamer which brings us within view of Batavia we see only a low and marshy shore—nothing of the beauties which are later presented. The steam launch which takes us on shore traverses a long canal guarded by two jetties which extend far into the sea. Following the formality of the customs inspection, one drives to the hotel, which in the present instance is in the old town. Here the long streets, composed of Chinese and Malay houses on the banks of muddy canals, and Dutch agencies and counting houses, afford but little that is interesting. The public buildings are poor and dilapidated. Following the course of a *kali*, or canal, bordered on the right with hovels and shops succeeded by residences and storehouses, on the opposite side of the canal is an avenue of trees, and, as a foretaste of the wonders to follow, the profiles of palms and high branches of *varingins* appear beyond.

A House in Batavia.

Here and there appear Chinese dwellings with their monstrous porches and walls, and eaves richly fantastic. These residences are models of comfort; they are preceded by a large court decorated with vases of flowers and shrubs. Right and left, beyond a row of the grotesque plants dear to the children of the Celestial Empire, are seen aquaria and great dovecotes. Three masses of buildings follow, the first devoted to receptions, the second to the women and the family, and the third to the housework.

The further we advance the more abundant becomes the vegetation, and the landscape broadens. The dwellings bordering the route are surrounded by gardens. There are little palaces, charming cottages, and we arrive at the hotel.

The hostess assigns to me two great rooms with a veranda, and gives me a Malay as a servant, who proceeds to unpack the trunks, shake and brush the clothing, show me the bath, to which he accompanies me, and does so well, notwithstanding that neither of us can understand the other's language we get on marvellously well. At table he stood behind my chair, brought the dishes, mixed my *kari*, and, the meal over-returned with me to my rooms. As regards the composition of *kari*, it is a frightful mixture of all imaginable things. Rice forms the basis, but there are added eggs cooked on the plate and omelette, cooked and dried fish, chicken, mutton, cucumbers, beefsteak, etc., the whole moistened with a yellowish peppersauce, and reinforced by four or five kinds of *achars emporte-bouche* which give to this over-praised dish a multiple nauseousness.

Every one rises early to profit by the cool morning hours. The long hotel veranda is populated with people in light costume languidly stretched on rattan lounging chairs: men in *mauresques* and *cabaïos*, women with loose hair, dressed in rich *sarrongs*, and with bare feet in gold-embroidered sandals.

This is the hour for promenade, and the avenues are lively with calèches and carts drawn by Timor ponies. Thousands of Malays of both sexes bathe at this hour in the *kalis*, like Hindoos in the Ganges. A most punctilious regard for decency prevails, and I have seen women, en-

tirely clothed, who did not drop their wet *sarrongs* until they were covered by a new garment.

Batavia is without doubt the best suited as a residence for the white race of any tropical city. It is not a city, correctly speaking, but an immense and beautiful park strewn with residences and palaces. There are no streets, but broad avenues bordered with great trees, embellished with tropical vegetation. These beautiful dwellings with columniated verandas, in white relief under the heavy shadows of palms and *varingins*—a species of tall fig—resemble Greek temples in sacred groves.

The museum of Batavia possesses an ethnographic collection of the Sunda Islands which is most complete. There may be seen Javanese huts, Malayan campongs, and the houses of Sumatra, idols, temples, arms, clothes, canoes, copper utensils, wooden pianos (xylophones), sonorous bamboos, gongs of all sizes, all shapes of pottery, and effigies or photographs of the natives. One may pursue in this immense hall a most instructive study of the manners and customs of the Malays. One room is devoted to statuettes, little idols of copper, silver and gold jewelry, rare and precious antiquities. Another is filled with a collection of ancient Javanese gods of the Brahmin Olympus. There are mortuary and boundary stones covered with inscriptions relating to the divisions of land—the most ancient monuments of this kind in Java, but all antedating the twelfth century.

The population of Batavia is very mixed. Besides the Malays and Javanese, who are natives of the island, are the Hindoos, Chinese, and Arabs; but the most restless is the inevitable Chinaman. Active, persistent, and economical, inured to labor and most eager of gain, no time or temperature repulses him. Alone, laboring under his burden or following the carriers, according to the importance of his station, a little drum of snakeskin or a little bell announces his passage.

The Malay is quite different. In Java the race is divided into three branches: the Soudanese on the west and in the mountains; the Javanese in the centre and east; the Malays upon the coast and in the towns. The latter come from Madoura, Amboine, and the Sunda Islands. All three are generally small and well made, with muscular power slightly developed; sometimes carrying heavy burdens as a result of special training.

They speak dialects known only among themselves, and have distinctive dissimilarities of cranial development. The Malayan head is large and flat; the forehead square; the hair plaited in European fashion. The Javanese have a long head, the vertex being higher; the forehead oval, and the hair plaits arranged in a half-circle. In both the eyes are black, slightly oblique, with yellowish or blood-shot sclerotics. They have broad noses, and lips projecting so much that, among the women especially, a rule applied to them will not touch the end of the nose. Both morally and physically the Javanese are much modified by an admixture of Hindoo blood.

The Javanese are sedentary; husbandmen; attached to the soil, serfs, and since twenty centuries have passed from one yoke under another, adopting the religion of Brahma, Buddha, or Mahomet, always submissive and conquered. Like all weak and oppressed races, the Javanese are profoundly religious. Religion is the compensation offered to the sufferer. Poor and without succor, the Javanese imposes upon himself pilgrimages to Mecca, which the Malay does but seldom. The knowledge of the dangers of the journey and of the death of those who have gone before does not prevent him. He has no care for tomorrow; never becomes rich, whatever be the produce of his toil. He lives always in the same hut, with the same food and clothing—a being sad, melancholic, and resigned.

The Malay belongs to a more fiery race. He is warrior, sailor, pirate, or merchant, and never easily accepts conquest. He remains free in certain of the Sunda Islands, and fights against the Dutch supremacy. In the islands of Madoura, Amboine, and Macassar he is submissive, and Holland recruits from among them its best colored soldiers. In Batavia he is willingly a servant for the sake of doing nothing, and fills several lower functions in the city administration, such as the care of the streets. As a servant he is gentle and serviceable, but delightfully lazy and susceptible to excesses. He requires good management, for he will not bear offence nor pardon an injustice. The white who wounds him exposes himself to a certain vengeance. Frequent cases are mentioned where Malays, armed with a pointed bamboo, have attacked and killed their master. At other times, when he doubts his courage, he becomes intoxicated with opium, brandy, etc., and with elevated head runs through streets and avenues, striking right and left, and venting upon several the injury of one. This is called *running amuck*. The streets are therefore provided with a body-guard having a collection of fantastic arms—lances, clubs, halberds, and long-toothed forks to pin the maniac against a tree or wall. They also have a piece of hollow timber on which to strike the hours and sound alarms.

The Malays live in the suburbs on the banks of the *kalis*, where a group of their cabins in the shade of the bamboos forms what is known as a *campong*. The women are laundresses or venders, and in the early morning hours may be seen under the trees on the avenues with their baskets of fruit and other wares, including rice and *kari* prepared in banana leaves, and tea.

A strange concert which strikes one's ears comes from the fighting crickets, which the Malays collect and keep in sections of bamboo. These insects fight with singular ferocity, and furnish a pretext for much betting.

If you wish betel leaves, you will see here baskets filled with the areca nuts, and the quid all ready for lovers of it; and there is no lack, for Malays and Javanese without exception follow this abominable custom. Inflamed mouths, blackened and eroded teeth, excoriated gums, are the result. No beauty can resist it, and the women, who are always homely, are not improved.

The Malays are very graceful, with their little Chinese physiognomy, their elegant forms covered with the many-colored *sarrong*, their well-shaped shoulders and arms appearing above the drapery which covers the breasts. The children are always charming in their semi-nudity, with heads shaven excepting a little tuft of hair like a plume.

The white race has not established a colony in Java, but an agency, as in India, and no more than in British India does the European take up his residence, cultivate the soil, or propagate his race. The climate does not admit of it. He comes here to secure employment, supervise a business, make a fortune—if it may be—and return to Europe. The white race does not prosper in that exhausting climate, where all labor is fatigue and the least movement causes debilitating perspiration. It is asserted that the first generation gives five girls out of every seven children, and that the family becomes extinct in the second. Men, however, are more resistant, and the climate affects them less rapidly. I have seen some old white inhabitants emaciated like opium smokers. Women are the greatest sufferers, their pale complexions and languid eyes giving evidence of the effects of the climate. The children are pale and fair like their mothers. Women and children go out of doors only between 7 and 10 o'clock, and always in a carriage, shutting themselves indoors later until after 5 in the afternoon. European women are rare, and this explains the frequent union of the whites with Malays or half-breeds (*nonnas*). A legal marriage is the exception, owing to prejudice, and the other attachments are attended with the inconvenience of being practically indissoluble. The spouse cannot absent himself without the consent of his companion. If she suspect his intention to abandon her, a voyage to Europe is forbidden. An excursion to Batavia is difficult—it is the road to Europe. If he ignores the interdiction he cannot escape the vengeance of his abandoned mistress nor defend himself from poison under many forms, slow and unknown, leaving no trace. If the man goes, the wife shows neither despair nor anger; her suffering, like her resentment, is silent. Once on the road, he becomes ill, loses flesh, digestion is disturbed, the emaciation increases, and he becomes hectic and cadaverous. His physician does not understand his strange condition and his directions are vain. His condition grows worse; for three or six months, it may be, he leads a painful existence, without a symptom which serves to enlighten the man of science. Still later tumors appear in his sides, abdomen, and chest, and the invalid is attacked with in-

tolerable pain. What is this poison? Bamboo! The bamboo is a reed which seems most inoffensive, but it really possesses, around the seeds which grow upon each point of its stem, a multitude of imperceptible, powder-like, sharp arrows, which the woman has put into the food of her husband before his departure. These darts have invaded his entire organism, penetrated his lungs, stomach, and intestines, and abscesses are the final result of the presence of these foreign bodies.

A Malay Family.

An excursion which imposes itself upon every stranger visiting Batavia is that to Buitenzorg, chiefly on account of the existence there of one of the most famous botanical gardens of the world. Buitenzorg is reached by rail in two hours. The name means in Dutch what *sans souci* does in French—"without care." Buitenzorg is at the foot of the volcano *Grand Salak*, flanked by two rivers, and in the midst of a beautiful landscape. It has always fresh water for its park, hotels, country houses, and baths, which to Europeans as well as natives is a matter of daily necessity. Frequent rains refresh the atmosphere, and its elevated position gives it a moderate temperature. The nights there are almost cold, and this beautiful, captivating place is the sanatorium of Batavia. It is the summer residence of the governor-general, who has a summer palace in the midst of the botanical garden.

The entrance to the garden is through an avenue composed of six enormous banyan trees, which have grown to such proportions and multiplied their trunks to such ex-

tent that it occupies about eight minutes for a carriage to pass through there at a trot. Passing on the left troops of tame deer, one arrives at the governor's palace, surrounded by terraces of flowers. The building, in Grecian style, is of but one story, with colonnade and verandas flagged with marble. The rear is similar to the front, and overlooks a garden in which are two little lakes where the great flowers of the *Victoria regia* spread themselves, with leaves more than 6 feet in diameter, and bouquets of verdure, palms, and dovecotes. On the right we find rows of enormously tall bamboos of all varieties and colors. The gem of Buitenzorg is its collection of palms, the most complete in the world, unless we so consider its success in an economical direction in the propagation of cinchona. At Buitenzorg is also the curious Thierman Museum, containing examples of the different species of the apes of the Sunda Islands, strange birds and insects. Among the former are the Molucca pigeons, large as young turkeys, and a complete collection of those strange insects which resemble so perfectly the forms of dead twigs or the leaves of trees. But that which is perhaps most interesting in the collection is the herd of miniature deer from Sumatra, about 25 Cm. in height.

[To be continued.]

A Street Guard in Batavia.

Tincture of Opium.

HOSEASON proposes (according to Prof. Attfield's Report) to make this tincture from the extract [which the Brit. Pharm. requires to contain only about 20 per cent of morphine]. The directions would be: Dissolve ¼ avoirdupois ounce of the extract in 6 fluidounces (Imp. m.) of water, add 10 fluidounces of alcohol, set aside for 12 hours, filter, and add enough diluted alcohol to make 1 pint.

On the Preparation of Neutral, Aqueous Solutions of Cresols.

After Fränkel had recognized the disinfecting action of cresols, solutions of these bodies were prepared by the intervention of sulphuric acid, since they are practically insoluble in water alone. The acid solution, however, was so caustic that it could not always be used. Next it was attempted to emulsify them by means of soap, or to convert them into a sort of soap by means of alkali. But all these agents are objectionable when the disinfectant is to be used medicinally. The great object was to produce *neutral*, aqueous solutions. This was accomplished by the original manufacturers of salicylic acid under Kolb's patent, who prepared solutions of cresol in a highly concentrated aqueous solution of sodium salicylate. Such a solution may be diluted with any amount of water without throwing out the cresol. It is immaterial which of the three true cresols (meta, para, or ortho) is used, or whether there are any higher boiling phenols present. The salicylate of sodium may be replaced by other soluble salicylates. Hueppe proposes the name "solveol" for all solutions of cresol prepared by the intervention of salicylates.

Instead of salicylates the metacresotates of sodium, etc., may be employed, or else the naphthalinsulphonates.

For medicinal purposes the most suitable solution is probably one containing 0 5 per cent of cresol dissolved by means of metacresotate of sodium. A solution of this strength has a greater bactericidal effect than a 2 or 3 per cent (and in some cases even a 5 per cent) solution of carbolic acid in water.—After *Arch. Hyg.* and *Chem. Zeit.*, 1891, 217.

A Source of Error in Arsenic Determinations by Marsh's Method.

It is a well-known fact that the evolution of hydrogen gas from dilute sulphuric acid and zinc is rendered more steady and uniform if a few drops of solution of platinic chloride are added. J. Thiele has recently announced (in *Chem. Zeit.*, 1891, 214) that, if arsenic is to be tested for, this addition of platinum must be omitted, since the arsenic reaction is notably interfered with through it, or may entirely fail when only minute quantities are present, probably owing to the formation of arseno-platinum. Tin does not interfere with the reaction.

[Original Communication.]

PRACTICAL METHODS FOR ZINC DETERMINATION, GIVING EXACT RESULTS.

BY H. E. HOELKE.

I have recently done much work in zinc assays, and have learned something of which I should like to give your readers the benefit. I tried the method in common use (Schaffner's), precipitating with Na_2S of previously established titre, but found it quite unsatisfactory owing to the uncertainty of the end reaction. As indicator I used nickelous chloride, recommended by Mohr, because it is not affected (blackened) by zinc sulphide, as lead or silver salts are; but I found it *not sufficiently sensitive*, for, when a decided change of color was produced on the nickel spot, the liquid smelled quite perceptibly of H_2S. I therefore tried two other ways, which proved highly satisfactory.

The Zn solution, if acid, is rendered slightly alkaline, and precipitated with slight excess of sodium sulphide. After settling and decanting the clear portion the rest is thrown upon a filter, washed with warm water to remove excess of sodium sulphide, then the precipitate filtered, and all is thrown into a solution of ferric sulphate and some sulphuric acid added, when the following reaction will readily take place:

$$ZnS + Fe_2(SO_4)_3 = ZnSO_4 + 2FeSO_4 + S.$$

Pour it all into a graduated cylinder, and fill up to 100 C.c. Shake well and let settle; then pour off 50 C.c. or filter (which is really not necessary, as a little suspended sulphur will not interfere), and determine the $FeSO_4$ in the 50 C.c. with $KMnO_4$, and multiply the result by 2. Every 112 units of iron found represent 65 of zinc.

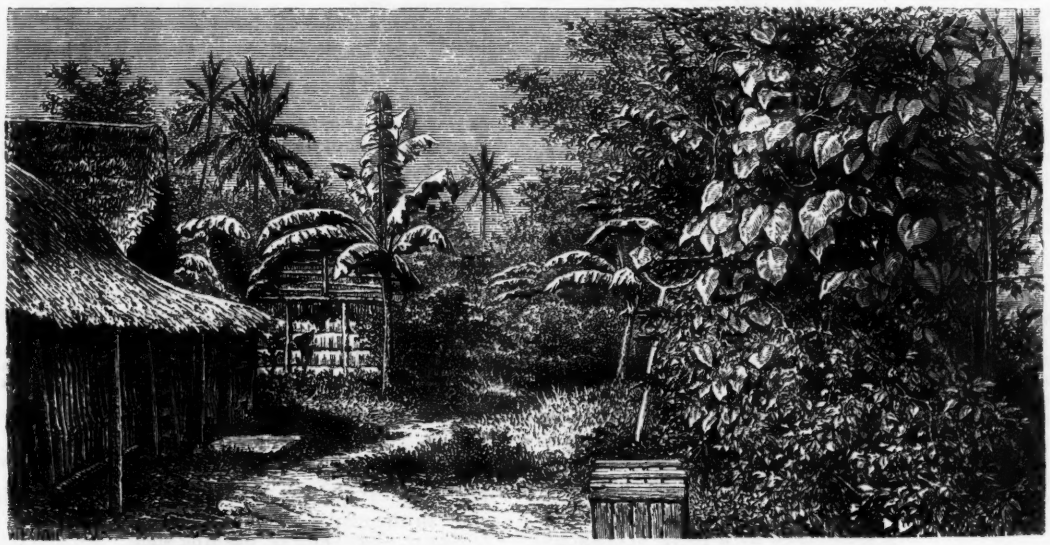
The other way is to use, instead of ferric solution, argentic nitrate (a measured quantity of known strength):

$$ZnS + 3AgNO_3 = Zn(NO_3)_2 + Ag_2S + AgNO_3.$$

I use a titred solution of KCNS, and as indicator a drop or two of $Fe_2(SO_4)_3$, which is Volhard's method, and find it easy and reliable. In the latter method it is necessary to heat the ZnS with the silver solution, to make sure of the complete absorption of the sulphur by the silver.

The excess of silver found is to be deducted from the whole quantity used, representing the quantity combined with the sulphur. The proportion is 216 silver = 65 zinc.

The same principle can be made use of in sugar determination in diabetic urine. The latter is boiled with ex-



A Campong.

cess of Fehling's solution, the cuprous oxide collected and washed on a filter, then immersed in ferric sulphate, H_2SO_4 added, and titred with permanganate (56 units of iron found = 36 glucose):

$$Cu_2O + Fe_2(SO_4)_3 + H_2SO_4 = 2CuSO_4 + 2FeSO_4 + H_2O.$$

The results are quite reliable, if the work is done with ordinary care, and certainly preferable to the tedious methods of spotting for the end reaction.

I am well aware that to any well-posted chemist these methods are not new, but I believe they are not sufficiently appreciated, because I know most professionals stick to the "old way," principally, I believe, because they have not tried them.

ST. LOUIS, Mo., August 28th, 1891.

Sodium Salicylate.*

BY J. G. SPENZER, OF COLUMBUS, OHIO.

SODIUM salicylate may contain impurities existing primarily in the materials used in its manufacture, or such as are derived subsequently from the atmosphere (from certain gases, such as ammonia), or which are caused by the influence of light.

This being so, one would surmise, and correctly, that a varying degree of purity must result; in fact, Hager ("Pharm. Praxis," vol. ii., p. 587) thus describes its condition in the forepart of 1877: Gray, white, very white, with little odor or strongly odorous, quite stable or very unstable, more or less strong in taste, likewise in its caustic effects on the mouth, stomach, etc. To which may be added the pink preparation even now met with.

The following fifteen samples have been examined for their purity.

Number 15 is an ether-washed sample of 14, and was used as a standard or check.

APPEARANCE—COLOR—ODOR—STABILITY—SOLUBILITY—REACTION—TASTE—PER CENT RESIDUE—SUGAR—PHENOL—CHLORIDES—SULPHATES—CALCIUM COMPOUNDS—FOREIGN ORGANIC IMPURITIES.

An abridgment of the pharmacopœial requirements will be given here to show subsequently the fallacy of some of them.

Small white crystalline plates or a crystalline powder, permanent in the air, odorless, having a sweetish saline and mildly alkaline taste and a feebly acid reaction.

Soluble in 1.5 parts of water, in 6 parts of alcohol at 15° C. Ignited it leaves an alkaline residue amounting to between 30 and 31 per cent of the original weight.

Agitated with concentrated sulphuric acid, should not impart color in fifteen minutes.

Filtered solution of 1 Gm. in a mixture of 50 C.c. alcohol and 25 C.c. water acidulated with nitric acid should yield no precipitate nor become turbid when tested with barium chloride (absence of sulphates) or by silver nitrate (absence of chlorides).

1. By means of a Coddington lens or microscope, its structure can be determined.

2. *Color* is best distinguished by looking into a break in a mass.

Gray and pink preparations are still found. If the white color has a gray or yellow shade, Hager (vol. iii., p. 758) says it is due to an excess of soda, while if it has a pink or red tint it is due to an excess of salicylic acid; also that the red or pink coloration is noticed sooner when phenol is present.

3. *Odor.*—(*a*) On opening a bottle closed for some time. (*b*) By heating some in a dry test tube by placing it in a water bath, not boiling. (*c*) Odor of the dry ether extract.

4. *Stability.*—Although Allen ("Commerc. Org. Analys.," vol. iii., part i, p. 57) says it is permanent in the air, he corrects the statement (ibid, 58) by saying it is liable to acquire color by keeping, especially if exposed to the air.

This coloration is due, according to Hager ("Pharm. Praxis," vol. iii., p. 758), to the influence of the carbonic acid gas and ammonia in the air. Even when well kept in a tightly stoppered bottle it is difficult to keep it white for a time (ibid., p. 759). The stability of the samples was not looked into, as, for comparison, samples of each made about the same time would be the only criterion.

5. *Solubility.*—(*a*) In water is variously stated:

In less than an equal weight (Hager, ibid., 759).
Equal weight, Rasenack ("Dammer's Lexikon," p. 597).
" " Schmidt ("Pharm. Chem.," vol. ii., p. 751).
In 1½ parts by weight, U. S. P. (1883, p. 301).
" " " " " Allen ("Commerc. Org. Anal.," vol. iii., part i., p. 57).
In .6 parts alcohol, U. S. P. (1883, p. 301).
" 5 to 6 " " Hager ("Pharm. Praxis," vol. ii., p. 537).
" 5 to 6 " " Rasenack ("Dammer's Lexikon," p. 597).
" 8 " " Allen ("Commerc. Org. Anal.," vol. iii., part i., p. 57).

6. *Reaction.*—Neutral or but slightly acid; use of blue and red litmus paper with the alcoholic and aqueous solutions, or by placing some of the dry salt on the moist paper according to E. Geissler (Hager, "Pharm. Praxis," vol. iii., p. 759).

7. *Taste.*—Dry salt and solution.

8. *Per Cent Residue.*—Ignition of a weighed quantity in a platinum crucible to a constant weight: Hager (ibid.) says it should yield not less than 30 or over 32 per cent; Schmidt ("Pharm. Chemie," vol. ii., p. 750), nearly 31.3 per cent; Allen ("Commerc. Org. Analys.," vol. iii., part i., p. 257), 30 to 31 per cent; U. S. P. (1883, p. 302), 30 to 31 per cent.

In no case was it found as low as in any of the above.

If sodium salicylate be considered hydrous, as

Salicylic Acid	76.33
Sodium Oxide	18.34
Water	5.33

the theoretic amount would be 31.35 per cent, as

Na_2O	: Na_2CO_3	:: Na_2O	: Na_2CO_3		
62	106	18.34	x	= 31.35 per cent.	

If taken as anhydrous, it would be 33.458 per cent, as

Salicylic Acid	80.63
Sodium Oxide	19.57

Na_2O	: Na_2CO_3	:: Na_2O	: Na_2CO_3		
62	106	19.57	x	= 33.458 per cent.	

The writer thinks 33 per cent of Na_2CO_3 to be nearly correct in the neutral article.

9. *Sugar.*—(*a*) Odor of burning sugar (caramel) on igniting. (*b*) Blackening when mixed with sulphuric acid. (*c*) Reduction of Fehling's solution after boiling with dilute sulphuric acid.

Some authorities state that pure sodium salicylate gives a reaction with Fehling's solution; this is erroneous, however, for beyond a changing of the blue color to a green (characteristic of salicylic acid) it causes no reduction.

10. *Phenol.*—Numerous methods were tried, but as yet a chemical test is wanting which will distinguish with certainty a contamination of sodium salicylate with phenol.

In support of this statement, the following results are given:

(*a*) Extract slightly alkaline aqueous solution with stronger ether, evaporate the latter, gives a greasy deposit if phenol is present. The greasiness of the deposit or its odor can only be used to detect it. Since sodium salicylate is soluble in from 200 to 250 parts of ordinary and 500 parts of chemically pure ether, the residue, therefore, would contain sufficient salicylic acid to hinder or obscure the chemical reaction for phenol, as will be seen later.

(*b*) Rice's test, the officinal test of the Pharmacopœia for detecting carbolic acid in salicylic acid, is not reliable, as it gives a similar reaction for salicylic acid as it does for phenol.

(*c*) Almen ("Baudrimont, Dictionnaire," 1863, 79; Pro-

* Read at the thirteenth annual meeting of the Ohio State Pharmaceutical Association, Dayton, O., June 9th, 1891.

ceedings Ohio State Pharmaceutical Association, 1890, 79) proposes Lex's test, but the test gives with sodium salicylate free from phenol a light amber to a dark-brown coloration, which effectually masks the delicate pale blue on which the value of the test depends.

(*d*) Dragendorff's modification of Jacquemin's test is also faulty, as it gives a bluish-green coloration with the pure salt. Dragendorff has not proposed it as a test for phenol in salicylic acid, but it was used as a substitute for one which Muter (Proceedings Ohio State Pharmaceutical Association, 1890, p. 79; Allen, "Commerc. Org. Anal.," vol. iii., part i., p. 55) has suggested, and with which it is practically identical.

(*e*) Solution of sodium salicylate poured upon the surface of a solution of potassium nitrite in sulphuric acid has proven unreliable, as the latter produces a greenish-blue cast with water alone. With sodium salicylate a carmine-red, easily diffused line of demarcation was produced in all the tubes, but no green coloration in any minutes. The production of a faint light yellow or light amber should be allowed, otherwise the test is valueless, as the best samples affect it that much under the conditions of the test. From the results of the preceding, shown in the table, the sodium salicylate now on the market varies in its purity.

That of American manufacture does not answer all the pharmacopœial requirements and is not as good as the foreign article. There was no indication of adulteration. The traces of impurities were undoubtedly derived from the materials used in its manufacture. Still the sale of the bulk article and paper-box packages may be accountable to some extent for the acquirement of color through atmospheric influence.

Sample No. 12, as far as color is concerned, is a little the worst of any the writer has ever seen, whilst samples 7, 8, 14, and 15 are of the same good quality which they have been for the last fifteen years.

It is difficult to find a sample which will not, particu-

SODIUM SALICYLATE.

	Appearance.	Color.	Solubility alcohol six parts.	Solubility water equal weight.	Odor.	Reaction Litmus.	Taste.	Per cent of residue.	Sugar.	Chlorides.	Sulphates.	Foreign Organic Matter.	Calcium Compounds.	Phenol.	Manufacture.
1	Crystalline powder	Faintest pink * Faint amber † Light amber ‡	Entirely soluble except trace Na_2CO_3	Soluble in less than own weight	Normal	Neutral	Sweetish	33 09	None	Faint trace	Faint trace	Light amber	Faint trace	Not appreciable	American
2	do	do	do	do	do	do	do	33.20	do	do	do	do	do	do	do
3	do	Faintest pink Faint amber Light amber, greenish cast	Soluble; trace calcium sulphate	do	do	Faintly alkaline	do	33 29	do	Trace	Trace	do	do	do	do
4	do	Faintest pink Faint amber Light amber	Soluble; trace Na_2CO_3	do	do	Neutral	do	32.98	do	Faint trace	Faint trace	do	do	do	do
5	do	White Colorless Light amber, greenish cast	Soluble; trace calcium sulphate	do	do	Alkaline	do	33 52	do	do	do	do	Trace	do	do
6	do	do	do	do	do	do	do	33 33	do	Trace	Trace	do	do	do	do
7	do	White Colorless Colorless	Soluble; no residue	do	do	Acid	do	32 55	do	None	None	Faint light amber	None	do	German
8	do	do	do	do	do	do	do	32 74	do	do	do	do	do	do	do
9	Granular; microscopical crystalline plates	Yellowish pink Faint amber Light amber	do	do	do	Neutral	do	33 08	do	Faint trace	do	do	do	do	American
10	Crystalline powder	Faintest pink Colorless Very light amber	do	do	do	Faintly acid	do	32.90	do	do	do	do	do	do	German
11	do	Faintest pink Faint amber Light amber	Soluble; trace Na_2CO_3	do	do	Neutral	do	33.03	do	Trace	do	Light amber	do	do	American
12	do	Pink Light brown Dark wine	?	do	do	Acid	do	33.075	do	do	do	Brown	Trace	Phenol	do
13	Granular microscopical crystalline powder	Yellowish white Colorless Light amber	Soluble; no residue	do	do	Faintly alkaline	do	33.28	do	Faint trace	do	Light amber	None	Not appreciable	do
14	Crystalline powder	White Colorless Colorless	do	do	do	Acid	do	32.88	do	None	do	Faint light amber	do	do	German
15	do	do	do	do	do	Neutral	do	33.11	do	do	do	do	do	do	do

* Color of powder. † Color of alcoholic solution. ‡ Color of aqueous solution. ? Soluble, except a brown coloring matter which is insoluble in alcohol, but soluble in water.

part of the test; the deep red would have concealed it had it existed.

(*f*) Sulphuric acid and sodium nitro-prusside, like phenol sodium salicylate, gave a rose-red line of demarcation; in all cases samples 1, 7, 8, 10, 12, and 13 gave a dirty greenish-yellow lower margin to the line.

(*g*) Sodium salicylate and nitric acid: 5 grains of sodium salicylate dissolved in ½ drachm water, 7 drops ordinary nitric acid added, and let stand for some hours. Yellowness was caused in 1, 2, 3, 5, 6, 10, and 12; faintest yellow in 4, 7, 8, 9, 11, 13, 14, and 15.

On supersaturating with sodium hydroxide a deeper yellow was produced in all cases.

11. *Chlorides.*—Treatment of the dilute alcoholic solution, as directed in the Pharmacopœia, with silver nitrate.

12. *Sulphates.*—Treatment with barium chloride.

13. *Calcium Compounds.*—Treatment with ammonium oxalate.

15. *Foreign Organic Matter.*—Agitated with concentrated sulphuric acid, should not impart color in fifteen

larly when closed for some time, be possessed of some odor.

This odor is rendered more prominent by heating in a dry, closed glass-stoppered bottle on a water bath.

Certain corrections might be made in the pharmacopœial requirements, as: It should be soluble in less than or an equal weight of water, in from 5 to 6 parts of alcohol, and both of the solutions to be colorless. It should leave very nearly 33 per cent of residue upon ignition to constant weight.

The acquirement of only a faint amber coloration when agitated with concentrated sulphuric acid.

Iodine in Norway.

A NEW industry, which promises to become of permanent value to the coast inhabitants of Jœderen, has recently been started in Norway. This is the burning of seaweed, which is found in great abundance on the coast, and the preparation of kelp for the manufacture of iodine.

The Alkaloidal Value of the Commercial Henbanes.

THE following is an abstract of a paper by Mr. A. W. Gerrard, read at the recent British Pharmaceutical Conference (after *Chem. and Drugg.*):

Referring to his paper, read at Leeds last year, on the "Alkaloidal Value of Annual and Biennial Henbanes," Mr. Gerrard said he then showed that both varieties were about of equal strength. At that time he had no intention of carrying the work any further, but soon after the publication of his note he received a letter from Messrs. Evans, Lescher & Webb, saying: "We are sending you 4 pounds of henbane leaves, which, we believe, is the foreign annual plant. It was obtained from Leipzig. We shall be glad to know the result of your examination of the same."

Subsequently, in reply to a note, the same firm forwarded a large sample of French henbane, with the remark, "This is collected in France, and is, we believe, what is there used for medicinal purposes." Mr. Gerrard determined to examine these henbanes and compare them as to value with ordinary commercial English varieties. Judging from appearances and other circumstances, the foreign kinds were, at the very least, two years old; so, to make the comparison as fair as possible, English samples of a not less age were obtained. Though no positive or exact information as to the age of any sample was forthcoming, he is confident that all had been collected two, and possibly some five or six, years previously.

The general appearance of the German henbane was rough. It was composed chiefly of the annual plant, root, stem, fruit, and leaves being present in various stages of development. With it was mixed about one-fourth of its weight of first year's biennial leaves, in some cases with the root attached. A few grasses and some leaves of unknown plants were intermixed. Its odor was somewhat musty and narcotic, and its color dull green.

The French henbane had a very fair appearance, was entirely the first year's biennial kind, consisting mainly of leaves, but here and there a root was found. Its color was pale green, and odor hay-like, scarcely narcotic.

The English varieties used were the second year's biennial flowering tops, in flattish masses of flower and leaf, consisting of the helicoid cyme of the plant collected before the fruit had formed, constituting the highest priced and most valued variety of the English drug. Likewise the first year's growth of biennial leaf. The former was the brighter sample and had the sweeter odor; the latter was darker and more narcotic in odor.

The process followed for the extraction of the alkaloid was exactly the same as that adopted in previous investigations described in the "Year Book of Pharmacy," 1890, page 347. Briefly, it was as follows: A proof-spirit extract was made from 1 Kgm. of the leaves, and the alkaloid removed by ammonia and chloroform. The chloroform residue of impure base was dissolved in pure ether, then shaken out from the latter by hydrochloric acid; again the base was shaken out from the hydrochlorides by ammonia and ether. Finally, the residue from the ether was estimated volumetrically with hydrochloric acid, 1 C.c. being made equivalent to 0.0289 Gm. of base, which may be either atropine or hyoscyamine, as both have the same basic power. The following table shows the result of the examinations:

Whence obtained.	Part used.	Yield of base per 1,000.
Germany.....	Entire annual herb.....	0.295
France.....	First year's biennial leaves....	0.398
England.....	" " " "	0.390
"	Second year's biennial tops....	0.451

These results show that the German article is of low quality, containing roundly one-fourth less alkaloid than the French or English leaves, and one-third less than the English tops. Looking at the rough character of the German sample, and the amount of stem present, the result is not contrary to expectations. Mr. Gerrard did not wish to create the impression that this is the kind of henbane commonly used in Germany, as the care he has seen exercised in that country over the selection and storage of herbs leads him to believe otherwise. The fact, however, remains that such henbane is sent to various parts of the world, and presumably manufactured into preparations the quality of which must be very low.

These experiments appear to show that a considerable falling off in the alkaloidal value of the leaves takes place with age, for the fresh leaves examined last year gave an average yield of 0.665 of base per 1,000, while the old leaves now examined only show an average of 0.383 per 1,000. It is safe to say that such a large difference cannot be attributed to conditions of growth or locality, for two of the old low-quality samples were grown in England, and one of them, when fresh three years ago, gave 0.600 of base per 1,000; so it seems certain that deterioration takes place with age.

In conclusion, it is worthy of remark that a bright-colored, well-preserved sample of henbane, whether of the annual or biennial kind, can with certainty be relied on for making good preparations, but old and dark-colored leaves, containing stalks and fruit, should be avoided. It is further gratifying to know that the quality of the English-grown drug is fully equal to that of foreign markets.

Citric Acid as a Normal Constituent of Milk.

TH. HENKEL has found that citric acid is a normal constituent of cow's milk. Sterilized condensed milk regularly deposits a sediment consisting almost entirely of calcium citrate. In a factory of milk products to which Henkel had access, fresh cow's milk is first "purified" by centrifugal machines, then evaporated to one-third in vacuo, and the condensed product heated in hermetically sealed tin boxes so as to sterilize it. Upon standing during several days, there are found in the cans concretions or voluminous precipitates which, when the milk is diluted, fall to the bottom. They consist chiefly of calcium citrate mixed with a little casein.—*Zeitsch. f. angew. Chem.*, 1891, 503.

Concerning the occurrence of citric acid in milk, A. Scheible has contributed a detailed account in *Landwirthsch. Vers.*, 39, 153 (abstracted in *Zeitsch. f. angew. Chem.*, 1891, 503). This investigator found that cow's milk contains between 1.7 and 2 Gm. in a liter, goat's milk 1 to 1.5 Gm., and human milk about 0.6 Gm. The occurrence of citric acid in milk has heretofore been overlooked. Its isolation is quite a task, the process given by Scheible being quite tedious and circumstantial. It depends in the main upon the fact that a mixture of alcohol and ether in definite proportions will dissolve the citric acid, while it will leave undissolved the other constituents of the serum of milk.

Hastening the Reaction between Hydrogen Peroxide and Permanganate.

WHEN a solution of potassium permanganate acidulated with sulphuric acid is made to act upon hydrogen peroxide (dioxide), the reaction is sometimes quite sluggish, though when more permanganate is afterwards added the latter is at once rendered colorless. If, however, the hydrogen peroxide was previously mixed with a little manganous sulphate, the reaction with permanganate will take place fully and at once, at the first contact. It seems that the presence of manganous sulphate—itself one of the first products of the reaction between hydrogen dioxide and permanganate—is necessary for the continuance (or rather commencement) of the reaction. R. Engel, who makes this communication in the *Bulletin de la Soc. chimique*, vol. vi., 17 (*Chem. Centralbl.*, 1891, ii., 338), assumes that permanganate of potassium, when first encountering the manganous sulphate, oxidizes this to manganic sulphate. The latter salt is then decomposed again to manganous sulphate by the hydrogen dioxide.

If the hydrogen dioxide is very pure, and if the sulphuric acid contains neither sulphurous acid nor any nitrose, the reaction between permanganate and the dioxide is very slow. Yet, as these conditions of extreme purity are seldom present together, the tardiness of the reaction under those circumstances has not been noticed or understood up to the present time.

CONSTANT-FEED APPARATUS FOR DISTILLING WATER.

It is a common practice among druggists [not so common as the author believes.—Ed Am. Drugg.] to obtain the Aqua pura and Aqua destillata required in making their preparations from either the pump or hydrant, and others seem to think that filtered water will answer these requirements. Distilled water is not only absolutely necessary for pharmaceutical purposes, but for general chemical and analytical processes as well. It has been my experience that the methods for producing distilled water, as usually found in the pharmaceutical and chemical laboratories, are not only tedious and expensive, but often inadequate to produce the required amount. In my own experience in pharmacy and the laboratory, there has been no more vexatious problem to solve than how to provide sufficient distilled water with economy of time and expense.

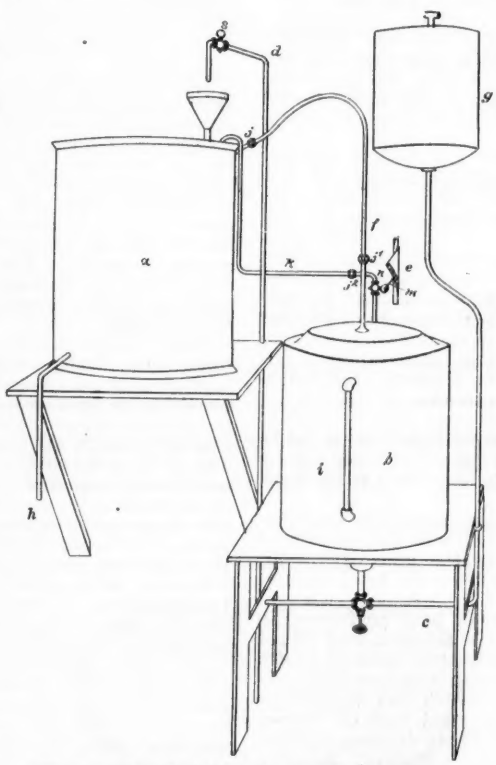
Some few years since I devised and constructed an apparatus which has been entirely satisfactory, and requires so little attention, and withal is so economical to operate, that the distilled-water question has been practically solved for our laboratory. For the benefit of those encountering the same difficulty, I give the construction and operation of the apparatus in detail.

The drawing shown is an outline view of the still as it stands in the laboratory. The condenser, *a*, stands on a shelf fastened to the wall, *b* is the boiler or evaporator, and *c* a gasoline stove supported on a table, while *g* is the gasoline tank. To the boiler is attached the water gauge, *i*, while the steam pipe, *f*, passes to the rear of the condenser. A siphon pipe, *k*, leads the hot water from the top of the condenser to the bottom of the boiler, and the feed is regulated by the gauge cock at *e*.

Cold water is introduced into the condenser through the pipe *d*, which terminates in an ordinary bent gas burner, *s*, and there is an overflow pipe from the condenser not shown in the cut; *j*, *j'*, *j''* are ½-inch brass pipe unions.

The gasoline stove, which is considerably cheaper to operate than a gas burner, is of the single-burner type. The boiler resting on this is made of planished tinned sheet copper of the thickness ordinarily used by tinners, and has the tinned surface turned in; it is 12 inches high by 10 inches in diameter. Both top and bottom of boiler are pressed copper plates, such as are employed for the bottoms of coffee boilers.

The bottom should have the *concave* surface turned out so as to catch the flame and heat from the stove, while the *convex* surface is turned outward on the top. On what is to be the front of boiler shell, and at a distance of 1½ inches from both the top and the bottom, two holes should be punched on a vertical line, large enough to admit a ½ inch pipe elbow. These elbows should be soldered on from the inside before the top and bottom are fastened in place. After completing the boiler, a glass tube, *i*, of a diameter to snugly fit the openings in the elbows, should be cut about ⅛ inch longer than the distance between the edges of the elbows, and then fastened in place with a suitable cement. In this case dental cement mixed with phosphoric acid was employed. This will make a water-tight and reliable gauge.



Stine's Constant-Feed Apparatus for Distilling Water.

In the centre of the top is punched a ⅜-inch hole, and a piece of brass pipe of the same diameter and 6 inches in length is soldered in so as to project not more than ¼ inch in the boiler, and a ½-inch brass union is fitted to the end for attaching the steam pipe leading to the condenser. Brass unions are preferable, as they need no packing and do not corrode so readily. The condenser in this case is 11 by 14 inches, made of zinc, and contains the usual coil of lead pipe. I have, however, suggested the use of a 5-gallon cask, or even of a lard can, with a coil of ⅜-inch lead pipe about 20 feet in length, and found them entirely satisfactory as well as cheap.

To the steam end of the condenser coil is soldered another ½-inch union, *j*. A piece of suitably bent $\frac{3}{16}$-inch lead pipe is also soldered on the unions, and when these are screwed up make the steam connection from boiler to condenser. The three unions on the steam and siphon pipes are not strictly necessary, but, as they are not expensive, will repay their cost in convenience when taking the still apart for cleaning and repairs. The distilled water drips from the end of the condenser coil at *h*.

The siphon feed pipe, *k*, is also made from $\frac{3}{16}$-inch lead pipe. This should be so bent as to project an inch or so into the top of condenser, and a piece of rubber tubing 1 foot in length is then firmly wired on the end, taking care to make the joint air-tight. The rubber tube must be supported by a bottle ballasted with shot, or other suitable float, so as to keep the end of tube always in the hottest water at top of condenser and about 1 inch beneath the surface. If the rubber tubing is of sufficient length, it will prevent the end of siphon becoming uncovered from carelessness. At *j* is another union connecting the pipe *k* with the boiler; this is screwed on an ordinary gas burner cock, *n*, which is soldered to another ⅜-inch brass pipe, *o*, passing down to within 1 inch of the bottom of the boiler. It may be placed on a line directly back of water gauge, and should be as near the shell as possible to obtain the best circulation of the feed water. To the barrel of the cock, *n*, a 4-inch wire, *m*, is soldered; this moves over an index, *e*, which should be distinctly graduated. This index is made of sheet zinc and tacked to a strip of wood fastened to the wall.

The cold water is supplied to the condenser by the pipe *d*, and falls into a funnel attached to a pipe leading it to the bottom, where, as it becomes heated, it rises and passes off through an overflow pipe so placed as to always keep the end of the steam pipe covered. The condenser may be permanently placed on a shelf, and so adjusted that the surface of the water in it is at least 18 inches above the usual water level in the boiler. This will insure sufficient fall to operate the siphon. I have found it advisable to maintain the water level about 4 or 5 inches from bottom of boiler.

In the operation of the apparatus, steam passes into the condenser and heats the water circulating around its coils as the result of its condensation; this then rises to the top, and there passes off through the overflow pipe and the feed pipe to the boiler.

If the cold water be allowed to just drop into the condenser, it will keep this part sufficiently cool, and the feed water will be passed back into the boiler heated almost to the boiling point, and there will be very little water remaining to escape through the overflow. A good

deal of heat will be thus saved and the action be made continuous, resulting in a great saving of time as well. The feed water is so thoroughly heated that most of the dissolved gases are expelled before passing into the boiler, making it unnecessary to throw away the first part of the water distilling over each time the boiler is refilled. With the index, *e*, set at about V on the scale, just sufficient water passes back into the boiler to maintain a constant line in the gauge. After adjusting the fire and the feed, the still is usually allowed to operate for ten to twelve hours, requiring no attention other than to remove the bottles of distilled water when filled.

The capacity of a still with these dimensions is about 1 quart of water per hour, with a moderate fire, burning 2 quarts of gasoline in ten hours. This, with gasoline costing 13 cents per gallon, makes the expense of distilled water about 2½ cents a gallon.—PROF. W. M. STINE, of Ohio University, in *Scient. Amer. Suppl.*, No. 816.

A New Indicator for Alkaline Liquids.

WERNER BOLTON draws attention to a new indicator which indicates the change from alkalinity to acidity, not by the production or alteration of a color, but by rendering the previously clear and transparent liquid *turbid* through the production of a most finely divided precipitate of sulphur.

This indicator is suggested by the author for employment in factories, where titrations have to be performed under circumstances when changes of color cannot be trusted. It may also serve a good purpose in many other special cases.

The indicator consists of a concentrated solution of sulphur in an alkali sulphide. The solution must be concentrated, since only a minute portion is to be used as indicator at one time, and yet there should be enough sulphur to make a visible cloudiness. The author does not give any details regarding the practical preparation of the indicator, but there is no difficulty whatever about making such a solution as the author intends.

The indicator can, of course, be used only in alkaline liquids. Supposing 250 C.c. of such a liquid are to be titrated, it is sufficient, for such a quantity, to dip a glass rod into the indicator, and then to transfer it to the flask containing the solution.

If absolute accuracy is required, a small measured portion of the indicator may be added, and the amount of volumetric acid corresponding to the quantity of the alkaline indicator used deducted from the total amount required.

Titration with this indicator is best performed in Erlenmeyer flasks. The liquid to be titrated, and mixed with a minute quantity of the indicator, must be *heated to boiling* [hence it must not contain any free ammonia or ammonium carbonate], after which the volumetric acid is added. Each addition of acid will, of course, cause a momentary separation of finely divided sulphur, but this will be redissolved by active agitation. As soon, however, as the least trace of acid remains in excess, the turbidity or milkiness will remain permanent. This excess will thus be recognized by the separated sulphur, though it may be so small as to leave litmus paper unaffected.—*Zeitsch. f. angew. Chem.*

Salicin in Influenza.

DR. E. B. TURNER records (*Lancet*, July 18th, page 121) the results of treating two hundred cases of influenza with salicin. He states that, given in doses of 20 grains every hour at first, it will in the course of a few hours reduce the temperature to the normal condition, and convalescence is established as a rule in twenty-four hours. He also considers that it reduces the infectiousness of the disease. The sooner the remedy can be given after the first onset of the symptoms the sooner do the symptoms abate; and, if a case is treated at once after the first shiver, a normal temperature and freedom from pain are insured in about six hours. In the whole series of cases treated by Dr. Turner no complication, such as bronchitis or pneumonia, occurred.

Preparation of Absolutely Pure Hydrogen Peroxide Solution.

ACCORDING to Crismer, absolutely pure hydrogen peroxide solution is best prepared in the following manner:

Barium peroxide is mixed with water [and made into a thin milk], then decomposed by hydrochloric acid of the specific gravity 1.100, and the solution afterwards shaken with ether. The latter dissolves out a portion of the hydrogen peroxide. It is separated and shaken with pure water, to which it yields a portion of the dioxide. The ethereal solution is now separated and again brought in contact with a fresh portion of barium solution. The same operation is repeated several times. Finally there is thus obtained a solution containing 0.5 to 0.9 per cent of hydrogen dioxide which is absolutely neutral and free from other constituents. It contains no chlorine, but a little ether which assists in its preservation, and which may be removed, if necessary, by distillation in vacuo. The percentage of pure hydrogen dioxide diminishes very slowly by keeping.—*Bull. Soc. Chim. Paris* and *Chem. Centralbl.*

Gum Arabic and Gum Senegal.

THE employment of gum senegal as an adulterant of, or even as a substitute for, gum arabic led the author to investigate the properties of these two gums.

Gum arabic forms rounded or angular, colorless, yellowish, or brownish, and strongly refractive little lumps; whilst gum senegal is usually in long, straight or curled cylindrical pieces, but occasionally in mulberry-shaped nodules, and is either colorless or faintly yellow or white, like etched glass, superficially, and lustrous and transparent internally. The two gums are therefore readily detected in the uncrushed condition, but under other circumstances they require further investigation for their identification.

Water dissolves both gums, leaving a residue of wood fibres, these being usually red if from gum arabic and black from gum senegal. Potassium hydroxide and copper sulphate produce a blue precipitate in both solutions; the gum arabic precipitate is more considerable than the senegal precipitate. Moreover, the former is coherent and rises to the surface, whereas the latter is more flocculent and remains disseminated in the liquid. The precipitates are only very slightly soluble on warming, and are not reduced even on boiling. Under similar treatment, dextrin also gives a bluish precipitate insoluble in the cold, but soluble to a clear, dark-blue solution on warming, which solution is completely reduced by prolonged boiling. By heating with dilute potassium hydroxide for some time, solutions of gum arabic or dextrin become amber-yellow; solutions of gum senegal, on the other hand, scarcely alter, or are but very faintly yellow.

Mixtures of the gums arabic and senegal behave, with potassium hydroxide alone, like gum arabic; with potassium hydroxide and copper sulphate, like gum senegal. The blue precipitates from mixtures of dextrin with gum arabic or gum senegal are reduced on boiling, provided the quantity of dextrin is not too small; but when the latter is the case, after thoroughly warming, the precipitate must first be filtered off, then, on boiling the filtrate, reduction takes place if dextrin is present. When both gums as well as dextrin are present, the precipitate is washed, dissolved in dilute hydrochloric acid, and the gums precipitated by means of a large excess of alcohol; when settled, they are washed and examined by the above methods.

The examination of a sample of gum arabic may be conducted in the following manner: Dissolve the powdered substance in lukewarm water, examine residue—any gelatinous matter indicating foreign gums; treat the solution with excess of potassium hydroxide and copper sulphate, warm, filter, and examine for dextrin and senegal as described above.

Gum senegal has been stated to be more hygroscopic than gum arabic; but on drying at 105° the former lost 13.39 per cent, the latter 14.56 per cent, and, on exposure to the moist atmosphere, the former reabsorbed 6.15, the latter 6.34 per cent of water.—L. LIEBERMANN in *Chem. Zeit.*, 14, 665. After *Journ. Chem. Soc.*

Glacial Phosphoric Acid.*

A SAMPLE of glacial phosphoric acid was received from America which was stated to be the quality usually sold in the special market whence it came [United States]; it was imported from Europe. On analyzing it a large quantity of soda was found to be present; it was, therefore, a matter of some interest to examine a few samples, English and foreign, to see what was being sold.

Two English and two German samples were examined. For purposes of comparison a small batch of glacial phosphoric acid was made by the regulation method given in the text books, namely, by calcining phosphate of ammonia. This was analyzed, and the results of the analysis of the other samples were compared with it. The method devised for analysis of the free and combined metaphosphates was a new one, founded upon Thompson's observations on indicators, based upon the facts that dihydrosodic phosphate is neutral to methyl orange, but acid to phenolphthalein, and that hydrodisodic phosphate is neutral to the latter indicator. By this means we are enabled to estimate the *free* and *combined* phosphates. The sample of glacial acid, consisting chiefly of metaphosphates, is boiled, preferably with a known quantity of standard sulphuric acid, for about ten minutes, to convert the metaphosphate into orthophosphate. This is essential, since, though methyl orange reacts identically with metaphosphoric and orthophosphoric acids, with the former acid phenolphthalein gives no definite results. The sample is then titrated with normal soda solution, methyl orange being the indicator. The number of cubic centimeters used, after subtracting the equivalent of the standard acid used for conversion into orthophosphate, represents the *free* metaphosphoric acid—1 C.c. NaHO solution being equal to 0.08 HPO_3. The reaction is:

H_3PO_4	+	NaHO	=	NaH_2PO_4	+	H_2O
phosphoric acid		soda		monosodic phosphate		water

This same solution is then titrated afresh with normal soda solution, using one drop of alcoholic solution of phenolphthalein as an indicator. The number of cubic centimeters used represent the free and combined or total acids. To calculate results, subtract twice the number of cubic centimeters used in the methyl orange determination, and the balance represents the original combined metaphosphate. The reason for subtracting twice the number of cubic centimeters originally noted is that it takes twice the quantity of normal soda to form the salt Na_2HPO_4, which is neutral to phenolphthalein. The reaction is:

H_3PO_4	+	2NaHO	=	Na_2HPO_4	+	$2H_2O$
phosphoric acid		soda		disodic phosphate		water

This is an accurate method, and was carefully checked by the uranium process.

The sodium was estimated by Bettendorff's process (*Zeitschrift für analytische Chemie*, 1888. p. 24), which consists in placing a few grammes of the glacial acid in a known quantity of fuming hydrochloric acid of specific gravity 1.190, allowing to stand twenty-four hours, filtering through spongy platinum, washing with fuming acid, igniting and weighing, allowing for the solubility of the NaCl in the fuming acid (1 part NaCl = 1.348 parts HCl 1.190). The ammonia was estimated by distilling with an excess of soda into decinormal acid, and titrating with methyl orange.

The result of the analysis of sample A—namely, that prepared by calcining phosphate of ammonia—showed that it is not possible to drive off all the ammonium, about 8 per cent remaining. This requires a large percentage of metaphosphoric acid for neutralization. The *free* acid is 48 per cent; combined PO_3, 42.98 per cent. A small percentage of silica was found, which was contained in the phosphoric acid originally employed to make the phosphate of ammonia. Sample B, of English make, was the best in comparison, but contained soda as well as ammonia; the free acid was 52.8 per cent. The sample contained appreciable quantities of arsenic. Sample C is also English, and contains large quantities of soda—in fact, every pound weight of this acid contained soda equal to ¾ pound weight of hydrodisodic phosphate. D and E are both German samples, and contain soda equal to over 100 per cent of phosphate. F is the American sample referred to, and somewhat resembles C in its composition. G is an experimental sample, made by deliberately adulterating phosphate of ammonia with phosphate of soda and calcining. It contains, curiously enough, *ammonia*, whereas in sample H, made by calcining microcosmic salt, $H.NH_4.NaPO_4$, all the ammonia has been expelled.

GLACIAL PHOSPHORIC ACID.

Sample.	Origin.	Form.	Free HPO_3.	Combined HPO_3.	Equal to $-PO_3$.	Total HPO_3	Total by Uranium.	Total Base.	Ammonium.	Sodium.	Equal to $Na_2HPO_4 + 12H_2O$	Water.	Silica.	Arsenic.	Total.
A..	Made by ammonia process..	Lump..	48.00	43.52	42.98	91.52	91.84	8.05	8.05	None.	... .	Trace.	0.54	Trace.	99.57
B..	English.....	" ..	52.80	40.00	39.60	92 80	93.14	7.82	6.48	1.34	10.44	"	....	0.08	100 20
C..	"	" ..	46.08	39.36	38 87	85.44	85.40	9.79	0.07	9.72	75.63	5.60	....	Trace.	100.34
D..	German.....	" .	31.68	52.80	52.14	84.48	84.98	14.09	0.05	14.04	109.30	2.40	....	"	100 81
E..	"	Sticks..	36.48	47.36	46.77	83.84	83.70	13.49	0.06	13.43	104.48	3.25	....	"	100.00
F..	European*	Lump..	42.21	37.89	37.41	80.10	80.41	10.20	None.	10.20	79.30	10.10	....	"	99.92
G..	Experimental.....	" ..	44.16	46.72	46 14	90.88	90.65	10.10	4.87	5.23	40.67	Trace.	....	"	100.40
H..	Experimental from microcosmic salt.....	" ..	None	.....	.....	.....	78.12	22.50	.....	22.50	.....	.....	....	.....	99.7

* This is the sample referred to as sent from America and being of European origin.

To sum up the results, the use of soda is discouraged, as it leads to extensive adulteration. A good article, hard enough for all purposes, can be made by adhering to the regulation ammonia method. There is no advantage in having a very hard preparation, if the quality is to suffer so enormously.

The author, in concluding, advises pharmacists to use Bettendorff's test qualitatively; to unhesitatingly reject samples which show soda to be present; to insist upon the article being soda-free, and with no other base than ammonia present; and, in order to insure the percentage of free acid being kept up, to use the simple titration method with methyl orange for free acidity.

* From a paper by JOHN HODGKIN, read at the recent British Pharmaceutical Conference (after Chem. and Drugg).

Arsenical Poisoning.—The arsenic scare in Massachusetts appears to have received some support by the case of Dr. B. L. Robinson, assistant in the Gray Herbarium, Cambridge, who is said to have become seriously impaired in health through the arsenic with which the specimens in the herbarium were poisoned. That such a thing is possible, since the poisoning agent must be a *solution* of arsenious acid, or a *soluble* compound of arsenic sprinkled over the plants, is readily understood. It would not be correct, however, to employ this case as an argument to prove the general toxicity of *all* arsenic preparations—for instance, the insoluble compounds in which arsenic is present in wall papers.

Omalofo, a South-African Beer, as a Nutrient.

DR. HANS SCHINZ, an authority on South-African botany, who explored the German colonial territory in the southwestern part of Africa, reports that the Ovambo tribes, occupying a territory comprised between about 20° 13′ and 13° 30′ S. lat., are in the habit of preparing a sort of beer from the so called "coffee corn," derived from *Andropogon Sorghum* Brot. This plant occurs in different varieties, which were described by the author in the "Abhandlungen d. botanischen Vereins der Provinz Brandenburg" (part v., 1891). Regarding the nourishing qualities of the "beer" prepared from this corn, the author makes the interesting statement that it has an extraordinarily nourishing effect. Although it is very generally drunk in large quantities, and some of its effects might be attributed to the alcohol it contains, which is well known to be able to retard waste of tissue, yet he asserts that the natives can exist for many days, without apparent debilitation or injury, on the "beer" alone.

The "beer," or omalofo, as it is called, is prepared in the following manner: The corn or seeds are soaked in water and buried in the ground, probably for the purpose of starting germination. When this has been attained, it is reduced, by pounding, to a coarse meal. This is boiled with water in an earthen vessel, and then filtered in a crude contrivance prepared from palm leaves and pharnaceum grass. The clear liquid is put into calabashes, which are hung up in storehouses and allowed to undergo a slow fermentation. After one or two days the "beer" is ready and can be used.

The coarse meal produced from the corn by pounding is called ontaku. The natives sift this so as to separate the finer particles, which are used for other purposes. This ontaku is not only used to make the beer, but it is also used as food, mixed with the beer. Its nourishing power is materially greater than that of the "beer" itself.—From the work, "Deutsch-Südwest-Afrika," von Dr. HANS SCHINZ, 8vo, Oldenburg and Leipzig, 1891, p. 300.

Extractum Euonymi Siccum.

[*Preliminary Note by Ed. of Amer. Drugg.*—Extractum Euonymi Siccum was introduced into the British Pharmacopœia ("Additions," 1885) as an equivalent for the commercial *euonymin*, which had become a favorite chologogue with British physicians, and largely entered into the composition of certain popular proprietary laxatives.

At the recent British Pharmaceutical Conference, held at Cardiff, Mr. Michael Conroy read a paper on this subject, of which we give an abstract (after *Chem. and Drugg.*) in the following.

This paper contains a practical hint regarding the powdering of hygroscopic extracts, with the aid of *calcined magnesia*, which may be of service in other similar cases.]

The instructions contained in the "Addendum" to the British Pharmacopœia direct that this article shall be made by exhausting the root bark of *Euonymus atropurpureus* with a menstruum composed of equal parts of rectified spirit (sp. gr. 0.838) and water. The spirit is then distilled off, and so much sugar of milk added to the still fluid extract—the actual amount having been ascertained experimentally—that the final product shall contain 80 per cent of dry extractive. The mixture is then evaporated over a water bath until it becomes brittle. "The mass may then be powdered and kept in a well-corked bottle."

The last sentence is copied verbatim from the directions, and it is in reference to it that this note is presented.

Whatever success may be obtained experimentally in making this article in a small way Mr. Conroy could not say, but it is certain that the process is not suitable for making it in quantity. The method is right enough until it comes to the powdering of the dry extract; but this is a serious matter indeed to the unfortunate individual who has it to perform. It is so extremely hygroscopic that the operation has to be performed in a warm, dry room, and even then it is with the greatest difficulty that it can be obtained in a pulverulent form. But success in this is not of much value, as the powder soon coheres and forms quite a mass again, even in well-stoppered bottles. The author had tried two ways to remedy this defect, each of which is an improvement. In the first the extract was dried on a water bath without the sugar of milk, which was added, in the right proportion, during the operation of powdering instead. This was a great improvement, inasmuch as the extract dried better and powdered much more easily. The gradual addition of the sugar of milk, during the operation of powdering, prevented adhesion of the extract against the mortar, and gave greater freedom to the pestle. The resulting powder was paler in color, and kept very well in stoppered bottles.

The other plan consisted in adding calcined magnesia, instead of sugar of milk, to the soft extract, and in other respects following the official process. This plan in every way proved a success. The extract dried rapidly, and practically lost all its troublesome hygroscopic properties. The operation of powdering was performed easily under ordinary atmospheric conditions, without any special precautions, and the pulverized extract remained a perfectly mobile powder.

Light calcined magnesia was used in the operation, but probably the heavy kind would also answer. The light kind was chosen on account of its greater bulk. As the improvement in the preparation is a mechanical one, due to the fact that the particles of magnesia envelop the powdered extract and thus protect it from atmospheric influences, it appeared that the light kind would go further in this respect.

Samples of the official kind and the two others referred to in this note are on the table for inspection.

Benzoyl-Eugenol, or Benzeugenol.

FOLLOWING up a suggestion by Dr. A. Nannotti, an Italian physician, regarding the use of oil of cloves for the treatment of tuberculous affections, Dr. H. Thoms, chemical adviser of the firm of J. D. Riedel, Berlin, has been working with the object of producing a body or bodies in which the properties of eugenol (the chief constituent of oil of cloves) might be associated with those of other substances which have proved to be of therapeutic advantage in the treatment of tuberculosis antiseptically. Obviously, oil of cloves is far too irritating for subcutaneous injections, so Dr. Thoms aimed to get neutral compounds of it which would split up in the system. These he has found in benzoyl-eugenol and cinnamyl-eugenol. The former is obtained (*Pharm. Centralhalle*), by a process which is patented, in colorless and odorless crystals with a slightly bitter taste. The crystals melt at 70.5° C., are scarcely soluble in water, but dissolve easily in hot alcohol, chloroform, ether, and acetone. The body is neutral, and gives with concentrated sulphuric acid a purple-red color. *Cinnamyl-eugenol* is odorless, colorless, and tasteless. The crystals melt at 90° to 91°, and behave like the benzoyl compound towards solvents and sulphuric acid. It would appear that these bodies resemble benzosol (benzoyl-guajacol). At present their therapeutic properties are under investigation.—*Chem. and Drugg.*

The Reaction between Arseniuretted Hydrogen and Silver Nitrate.

ACCORDING to Lassaigne, the reaction which takes place when arseniuretted hydrogen passes through a solution of silver nitrate is the following:

$$\underset{\text{arsenetted hydrogen}}{2AsH_3} + \underset{\text{silver nitrate}}{12AgNO_3} + \underset{\text{water}}{3H_2O} = \underset{\text{arsenious oxide}}{As_2O_3} + \underset{\text{nitric acid}}{12HNO_3} + \underset{\text{silver}}{12Ag}$$

L. Marchlewski has investigated this statement, and finds that the free nitric acid produced in the dilution usually prevailing during the reaction would redissolve the silver or prevent its precipitation in a metallic state.

He believes that the reaction must be a different one, but does not suggest anything in place of it.—After *Berichte*, 1891, 2269.

American Druggist

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The Truth about "Tuberculin."

UNDER the above title, Dr. Joseph W. Stickler, of Orange, N. J.—a physician who has had special opportunities for becoming familiar with the subject upon which he writes—says, in the *Medical Record* of August 1st:

1. It does not cure pulmonary tuberculosis in either its primary or advanced stage. 2. If administered during the primary stage, it is apt to hasten the progress of the disease. 3. If given during the advanced stage, it is almost certain of hurrying the patient into eternity. 4. It may be given in such small quantities as to produce no appreciable reaction, and yet a very little may, in some individuals, give rise to distressing symptoms. 5. By causing a necrosis of the pulmonary tubercular tissue, it exposes the patient to a risk (septic absorption) which without the tuberculin he does not, to the same extent at least, incur. 6. It is fairly well demonstrated that it liberates the bacilli and favors their migration to distant organs, or to parts of the lungs not originally affected. 7. It creates false hope by producing an apparent temporary improvement. 8. If given for diagnostic purposes, it will probably make the diagnosis clear by giving a fearful, possibly a fatal, momentum to the tubercular lesion, if there be one. 9. It is a poison, and as it has not the power to destroy the bacilli, it is out of place in the animal economy. A tubercular patient has about all the poisons in his system he can tolerate. 10. It is a remedy which thus far has done more harm than good. 11. As it has not the power to cure, or even alleviate, and has the power to make worse or kill, it should not, in cases of pulmonary tuberculosis, be used under any circumstances. 12. If used in surgical tuberculosis, and previously undiscovered tubercular lesions of the lungs be developed by its use, treatment should at once be discontinued. 13. It seems to have the power to arrest the progress of lupus, and in uncomplicated cases may be used without jeopardizing the patient's life. Should latent tuberculosis of the lungs be made manifest by its use in these cases, it should promptly be stopped. 14. As tuberculin is not curative when used alone, and has been demonstrated to be a dangerous agent, it is irrational to use it in conjunction with other remedies in the treatment of pulmonary tuberculosis.

The time has come when the plain truth should be stated, by competent investigators, in relation to the subject under consideration. The results thus far obtained have been discouraging wherever it has been used, no matter how favorable the attending circumstances and conditions as to home, climate, hygiene, etc. I know of none (not one individual) cured. I know of none whose improvement can be clearly traced to the use of tuberculin. You say you know of persons who have been improved by the use of this remedy. If you do, your experience has been at variance with mine. The great majority of observers who have had ample opportunity to test its value, say they have failed of obtaining the gratifying results they had looked for. That it has done great harm in many instances there is not a shadow of a doubt, hence I say it is unjustifiable to continue the use of tuberculin in cases of pulmonary tuberculosis. If it were true that this class of patients had been benefited by it, we might conscientiously employ it; but in view of the fact that such cases cannot be brought forward, the above assertion I consider a safe one to make. So far as surgical tuberculosis, lupus, tubercular glands, and tubercular ulcers of the larynx are concerned, if they be uncomplicated with pulmonary tuberculosis, the remedy may be used with comparative safety. But here again we are confronted by the fact that "cures" are wanting. Let us then be honest and fair in this matter, and say unreservedly just what we believe. I am sure the medical profession received the statement made by Professor Koch in regard to tuberculin with joy and hopeful anticipation as to its future. I am sure the remedy has had a most thorough and searching trial, and such a trial was right and commendable, because the evidence furnished by the early use of tuberculin led us to believe it could arrest the advance of tuberculosis by destroying the tissue in which the bacilli develop and multiply, without compromising the life of the patient. But having made an extensive trial, and having obtained only discouraging results, let us put aside our bottles of "lymph" and look for something which will kill the bacilli. When we shall have found such a remedy or agent we shall indeed have cause to rejoice.

CORRESPONDENCE.

Perfume Formulas.

Editor American Druggist:

I trust you will pardon my remarking upon the recipes for new perfumes on page 218, that the "*Bouquet d'Amour*" is the old fashioned "*Rondeletia*" with the rose lessened and the musk left out; that "*Chypre*" is simply *Cologne Water;* and that in the "*Ylang Ylang Extract*" the oil is drowned in the two pints of alcohol.

Respectfully,
WILL. B. DORMAN.

BOSTON, August 31st, 1891.

The Question of Substitution.

To the American Druggist.

GENTLEMEN:—This morning I received a copy of *The Journalist*, a paper supposed to be devoted to the interest of newspapers, authors, artists, and publishers, nevertheless three and a half pages are taken up by what they call "Fighting the good Fight," *i.e.*, the substitution of own-made medicines for some largely advertised nostrum!

After following the controversy upon this subject in your valuable journal—of which I think I am one of the oldest subscribers—as well as in the *Western Druggist* and various kindred publications, I find it impossible to remain quiet any longer, being fully aware at the same time that the subject itself is becoming threadbare, having been given to us within the last twelve months *ad nauseam*. If you will allow the following a space in the AMERICAN DRUGGIST, it may help some of my colleagues in the drug business to more fully convince them of the proper position to take with regard to the selling, pushing, or cutting of proprietary medicines, or to offering, selling, and recommending a mixture of their own which, as the proprietary medicine manufacturers say, is much better, cheaper, and the composition of which is known to themselves as harmless, etc.

The other side of the question:

First. Are druggists really substituting when they sell an article which has *their* name and address on the label?

In answer, I would say that substituting, in its correct meaning, would be as if, in a prescription, some unprincipled chemist were to put cinchonine in a medicine where quinine had been ordered.

But to sell a customer a preparation of your own make for less money than any advertised article, at the same time being aware of its freshness and other good qualities, can no more be called substituting than if a dry-goods clerk were to sell a lady something cheaper and more durable than the kind she had in her mind when she entered the store. All this is nothing new.

Second. Are all proprietary medicines bona-fide remedies, or are they hurtful, poisonous substitutes for liquors and remedies which are known positively to be used for criminal purposes?

Who can answer question No. 2 after being in the drug business for twenty-eight years, as I have been, without a smile, when he remembers what were the motives of bringing some so-called bitters in the market? Do you remember the strict enforcement of the liquor law? Do you remember how much bitters and schnapps were sold by druggists to make-believe temperance advocates and solid pillars of the church? With the greater laxity of our excise laws, the sale of bitters has fallen off perceptibly. Next in order come the syrups for children. Are you not aware that one certain article alone is positively condemned by eminent physicians as having killed more infants than cholera infantum, or any other two complaints that babies are subject to, have done? Would you not be justified in persuading young mothers who may be anxious to go to a picnic or some other place of amusement, and who would like to have the baby sleep from eight to ten hours on a stretch, from using any kind of soothing syrup?

Finally, under this head belong certain wafers and pills which, although you may be compelled as a business man to keep in stock, you would never dare to mention to a customer of yours who is a real lady.

Third. Are the journalists disinterested parties in this controversy, and are they able to either judge or arbitrate in this matter?

To this question we must all give a very decisive No! For, in the first place, the newspaper men and editors of medical or trade journals are the recipients of large amounts of money from the manufacturers of patent medicines, and from the poor retailer the most they can get is a paltry $1 or $2 for a yearly subscription; so, of course, in consequence their sympathies would naturally be with the man of whom they derive the largest revenue. Even religious papers have been known to advertise some positively known fraudulent medicinal advertisements.

Are journalists able to judge or arbitrate in this matter? must also be answered with a no; for no man is able to judge or understand another man's feelings in regard to a matter of this kind, unless he follow Charles Reade's advice of putting himself in the other's place; for no man, unless he be a retail druggist of long experience, is competent to understand exactly the condition of affairs or able to devise a means by which this crying evil—the whole business of proprietary medicines and their sale at living profits—can be regulated.

Fourth and last arises the question: Who are these public benefactors, these manufacturers of these cure-alls? Are they always druggists, or are they unprincipled Shylocks who are after the pound and shilling of their victims? The reply to the last question is easiest of all, for every druggist knows that, instead of its being the rule that a new proprietary medicine is made and sold by a drug firm, the most heterogeneous elements go to make up companies formed to make and sell a new invention in medicine, as they call it, and many a rich sugar merchant, stock broker, or wholesale butcher has found to his sorrow that the promised millions of Colonel Sellers were not forthcoming.

Again begging to be excused for taking up so much of your valuable time, I remain,

Yours respectfully, R. M.

BROOKLYN, N. Y., August 29th, 1891.

INFORMATION WANTED.

OUR *readers will confer a favor by answering any of the following questions and referring to them by number. We will undertake to forward the answers to inquiries when the request for information is accompanied with a directed envelope and postage. The names of the respondents (unless otherwise indicated) will be published in the next issue of the journal.*

No. 2,538.—**Cuticura Resolvent—Cuticura Ointment** (T. G. L., Puerto Plata, Santo Domingo). The composition of the above is desired.

No. 2,539.—**Sachet Powder** (W. L. C., New York). Formula wanted for Violet Orris Sachet Powder, better known as "Violet Orris."

No. 2,540.—**Unfermented Wine.** Correspondent desires to be informed where he will find medical testimony regarding the unhealthful nature of unfermented wine due to the presence of anti-ferments used for its preservation.

No. 2,541.—**Shellac Black** (F. O., Lexington, Ky.). How may I obtain a very dark black color with a solution of shellac or rosin in wood alcohol? It must be permanent and non-corrosive. [Lampblack.—ED. AM. DRUG.]

No. 2,542.—Address of maker of **Paraffin Paper** (Anon.)

ANSWERS.

No. 2,535.—**Chloride of Gold and Sodium.**—*Correction* (of answer No. 2,535 of current volume).—Our attention has been called by Mr. H. E. Hoelke, of St. Louis, and several other correspondents to an apparent error in the formula for chloride of gold and sodium, given in the above-mentioned article. The formula is in answer to a query particularly referring to gold coin only containing silver as alloy. It was omitted to state that modern gold coin (United States, England, etc.) contains *copper*, and must be subjected to a different process to remove this. We give here an outline of the method: Dissolve 1 part of coin in 4 parts of aqua regia, evaporate the solution to a syrup, dilute with 30 parts of water (filter, if there should be any precipitate), and add a solution of 8 parts of ferrous sulphate in 50 parts of water mixed with 1 part of hydrochloric acid. Wash the precipitated pure gold, dry, and weigh it. Then dissolve it in aqua regia at a gentle heat, evaporate it to dryness, or, at least, to syrup, so as to expel the excess of acid. Again dissolve in distilled water, add 1.54 parts of chloride of sodium for every 1 part of metallic gold in solution, and evaporate, under constant stirring, to dryness on a water bath.

A Curious Property of Sulphur.

IN demonstrating that sulphur, melted at about 115°, can be cooled in paper, the author happened to use a lithographed card of which the edges were turned up. Upon taking away the card he discovered that the lithographed characters were clearly and distinctly impressed upon the cooled surface of the sulphur, and remained after hard friction and washing. By repeated experiments he has been able to get very fine results, removing the paper each time by a mere washing and rubbing process. He finds that sulphur will receive impressions from and reproduce faithfully characters and designs in ordinary graphite crayon, colored crayons, writing ink, typographical inks, china ink, lithographic inks (colored or uncolored), and others. He remarks, too, that it will reproduce with remarkable exactitude geographical maps.—M. CHARLES LEPIERRE, *Bull. Soc. Chim.*, 5, 308, and *J. Anal. Chem.*

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APÉNDICE Á LA SEGUNDA EDICION DE LA NUEVA FARMACOPEA MEXICANA de la Sociedad Farmacéutica de México. Escrita por la Comisión Permanente de Farmacopea. 8vo. México, 1890.

This supplement to the Mexican Pharmacopœia of 1884 has been prepared (according to the preface) by Messrs. Alfonso Herrera, J. M. Lasso de la Vega, S. Pérez, and F. Altamirano. It contains the principal drugs, chemicals, and preparations which have come into use in Mexico since 1884.

While the Mexican Pharmacopœia of 1884 was edited with remarkable care, showing that the text was under the careful control of an experienced editor—and we have reason to know that this was Prof. Alfonso Herrera—this present supplement is a perfect storehouse of blunders. Evidently the final text was not scrutinized by competent persons. Most notable and glaring are the mistakes in the English equivalents which the authors attempt to give to many chemicals or to pharmaceutical preparations. Thus, to quote only a few, we find the following in the text, which are expressly stated to be "Inglés":

Ebonimyn [meant for euonymin]; hidrochinone; oleate of zinci; terpinna [meant for terpin]; elixir of chloridi of Iron; elixir of paraldeida; syrup Lily the valley; mistura of antifebrin [thus always for "mixture of"]; Liquor of Peptonat of Iron and Ammonia; Liquor Perbromure of Iron; Solution officinal of Ergotin; Ergotin suppositoiries, etc.

Some English titles are not given in the text, but are found in the index. Here we find: Glycerina of Creasota; Great-flowret carolinea; Powder of flesh [meant for "powdered meat (or beef)"]; Yodised phenol, etc., etc.

Among the Latin titles we find monstrosities like the following: Oleas sthrycnicus (p. 30); Salycilas bassicus, etc. (32); oleum cum iodophormo (37); camphora naphtolatum (37); gossypi anthiseptici (37); collyrium *ex* Dr. Carmona y Valle (38); collodion sthypticus (38); collodion iodollatus (38); elixir de acidum salicylicum (38); elixir de chloruretum ferrosii (38); elixir maydis stigmatæ (38); elixir cum phosphas ferrosus (38); elixir cum pepsinæ (39); glycerinum cum chloralis, etc. (42); injectio paraldeydæ (43); syrupus de coffea arabicæ (44); syrupus cum lacto-phosphas ferroso-calcico (45); syrupus podophylinæ contra constipatio (45); syrupus chlorureti ferrosus (45); linimentum cephalicum ex Fuller [p. 46; this almost sounds like: Liniment from Dr. Fuller's brains]; pilulæ cum bromureti niquelis (46); pilulæ contra colico ex Sée et Capitan (47); potio glicerinæ ad glycosuriæ (48); pulvis digestivi ex Dr. Chavert (48); pomatum hamameli (49); solutio iodo-taniquæ normal (50), etc.

The botanical names throughout the pamphlet likewise need overhauling. We quote a few specimens: Clematis vitalva (2); Cuicus acantholepis (4); Anagalis arvencis (5); Hamamælis (8); Urostigma nimphæyfolia (13), etc.

Among proper names we encounter: Assa-Gray (8); Podwywotzki (31); Souberain for Soubeiran, p. 11, and even in the preface, p. vii., where we also find "Maish."

Regarding matters of fact there is much to be found which will not stand strict scrutiny. On page 35 the supposed alkaloid "tetano-cannabine" [spelled "tetano canabina"], announced by Hay as existing in Indian hemp, but not found by subsequent investigators (see Flückiger's "Pharmakognosie des Pflanzenreiches," 3d ed., p. 753), is actually quoted among the chemical products, with a detailed formula for its preparation (no dose is given, fortunately). We venture to say that none of the authors has isolated this principle himself, or knows anything about its medicinal properties.

The foregoing list of blunders could be greatly extended, but it is not worth while to do so. It is evident that the editor of this supplement was unequal to the task. We have a high regard for our pharmaceutical confrères in Mexico, and know that such blunders as those we have pointed out could have been avoided had the final revision been put in the proper hands. Hence our advice is to withdraw the present edition of the Apéndice and replace it by a new issue which will bring credit, instead of the contrary, upon the Mexican Pharmaceutical Society.

NEWS AND NOTES.

ENGLAND.

THE twenty-eighth annual meeting of the British Pharmaceutical Conference has just been held at Cardiff. For many years now it has been a recognized custom to hold the conference meeting at the same town as that visited by the British Association for the Advancement of Science. By this means increased membership and attendance is usually obtained, whilst extra facilities are provided for pleasant excursions.

Mr. W. Martindale, F.C.S., the president, with whom my readers are acquainted from a description in a previous letter, was fortunate in having placed at his disposal the handsome suite of rooms in the town hall for the reception of members and visitors, which commences the proceedings. The mayor of Cardiff, the Marquis of Bute, and other members of the corporation were present, and a conversazione and concert followed.

The sterner work commenced on Tuesday morning in the lecture hall of the University College, when the mayor formally welcomed the Conference on behalf of the inhabitants of Cardiff. The regular statements as to finances, membership, and executive work were made. Then followed Mr. Martindale's address. As a practical, scientific essay it was admirable, whilst the numerous references to the various difficulties that beset our calling were judiciously and energetically treated. From Koch's tuberculin, the new synthetic remedies, and Pictet's purified chloroform Mr. Martindale flittered to the protection of pharmacy to pharmacists and a higher standard of preliminary examination. At its conclusion Mr. Schacht proposed, and Professor Redwood seconded, a hearty vote of thanks. The reading of papers then proceeded. In point of number, these were far below that of last and previous years. There were only nineteen in all, and more than one presented the appearance of having been hastily concocted to supply the deficiency.

Cripps and Whitby detailed their attempt to ascertain the constituents of ipecacuanha. From the proximate analysis it appears that there were present starch 44.4 per cent, saccharose 2.12 per cent, dextrose 4.06 per cent, dextrin 2.08 per cent, and total alkaloid 2.42 per cent. They were unable to obtain the volatile alkaloid stated to exist in ipecacuanha root by Mr. Arndt, although they admitted the large percentage of alkaloid obtained could hardly be pure emetine.

W. H. Symons gave a short note on an ammoniated tincture of ipecacuanha which, made several years ago, had never deposited. The method was to moisten 1 ounce of ipecacuanha powder with 1 drachm of a 10-per-cent solution of ammonia, and then percolate with water containing 10 per cent of rectified spirit.

M. Conroy, F.C.S., chemist to Messrs. Evans, Sons & Co., Liverpool, criticised the new extract of euonymus that has been inserted in the British Pharmacopœia Additions as a substitute for euonymin. His objections were exactly those pointed out by me in the issue of the AMERICAN DRUGGIST for April 1st in this column. The preparation is so hygroscopic as to be impossible to keep for any length of time in a pulverulent condition. Mr. Conroy suggested the addition of light magnesia, instead of sugar of milk, to the soft extract.

Dr. Rideal followed with some further information upon "Indian Gums for Pharmacy Work." He has previously contributed on the same subject to the Society of Chemical Industry, and, although he added a considerable amount of scientific data, there was very little new information upon its uses in pharmacy. No attempt was made to suggest a method in filtering a solution or mucilage of gum ghatti (which has usually much impurity present), or to decolorize the same.

R. H. Cripps gave also a note on the volatile oil of copaiba, and described the apparatus by which he submitted the copaiba to the action of steam, easily separating the volatile oil from resin. The proportion of volatile oil present was found to vary from 41 to 60 per cent. No case of turpentine being used as an adulterant was met with.

E. M. Holmes, F.L.S., Curator of the Pharmaceutical

Society's Museum, contributed two useful notes on materia medica. The first was an attempt to show the origin of the different varieties of galbanum. In commerce we have two distinct articles, the Persian and the Levant. Mr. Holmes considers that the former is obtained from *Ferula Schair* and the latter from *Ferula galbaniflua*, whilst the recently introduced liquid galbanum is from some variety closely allied to *F. galbaniflua*. In the second note Mr. Holmes strongly advocated the cultivation of opium in India under better precautions, so as to prepare an article capable of competing with Turkey opium in morphine value.

The public analyst for Cardiff came next with a paper of purely local interest, namely, "The Water Supply of the Borough." That the water contains 28 to 30 parts of total hardness may be a good thing for rickety children, but must be ruinously expensive to soap consumers and manufacturers.

Two papers succeeded on "Henbane and its Seeds." A. W. Gerrard last year showed that the percentages of alkaloid in annual and biennial leaves and tops were nearly the same. He now gave the results of examining German and French henbanes. The alkaloidal yield of these was in each case about half that obtained from fresh English leaves, but not far below that of English dried leaves. The difference was attributed to length of keeping.*

F. Ransom, of Hitchin, reported as to the alkaloidal value of henbane seeds from biennial plants. He obtained 0.058 per cent of crystalline alkaloid from dried seeds. This amount is a little below the yield obtained by A. W. Gerrard in fresh leaves. The presence of 19 per cent of fixed oil and one or two other objectionable constituents caused Mr. Ransom to consider that the seeds could not replace the leaves in pharmacy.

Farr and Wright, two of our young pharmaceutical chemists, followed with suggestions based on analytical experiments as to the best alcoholic menstruum for tincture of henbane. They stated that dilute or strong alcoholic menstrua alike exhaust the drug, but a proof spirit tincture takes least of the chlorophyll out.

J. Hodgkin, F.I.C., F.C.S., gave a purely chemical paper "on Glacial Phosphoric Acid."† It appears that much of that on the market is contaminated with sodium or ammonium.

John Moss read a paper on "Cascara Sagrada," which he has for several years been closely studying. He is of opinion that the age of the bark is not detrimental; that the "fall" bark is not inferior to the spring; that bark from South Oregon is better than that from North Oregon. He found that, although hot water extracts all the virtues, they are not retained on cooling or by the addition of a small quantity of spirit. Proof spirit is the best solvent, and a liquid extract made with this more powerful.

Another public analyst, A. H. Allen, F.I.C., suggested in a lengthy paper a new method of assaying aconite and its preparations by conversion of the aconitine into a benzoate by saponification. Unfortunately a doubt was raised as to the presence of indefinite bodies which are also stated to yield benzoates on saponification, so that there will have to be more work done before accepting this method.

"Eucalyptus Oil" was the title of a paper which included a large amount of analytical data, by R. Davies and T. Pearmain. From these it is evident that eucalyptol (whether it is the active ingredient or not) was present in the other varieties of oil besides that obtained from *E. amygdalina* or *E. globulus*.

S. M. Burroughs, of the firm of Burroughs, Wellcome & Co., gave a short note on an emulsion of malt extract with castor oil. By rubbing these in a warm mortar any proportion of castor oil may be incorporated. The taste is improved by a small quantity of oil of almonds.

A dispensing note, indicating the danger of prescribing Liq. strych. with alkaline Liq. Fowleri, and a report upon medicated lozenges, concluded the meeting.

Excursions were made to several interesting and picturesque places near Cardiff, both by rail and steamer. The meeting was undoubtedly a success, although not so well attended as in former years.

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*See page 284. †See page 287.

MISSOURI.

A REGULAR meeting of the Executive Board of the Alumni Association of the St. Louis College of Pharmacy was held on August 4th. Prof. Hemm presided.

Dr. Whelpley, for the Committee on Papers and Queries, reported that a programme of alumni lectures to the students at the college had been arranged. This series of interesting lectures will be delivered during the next session by the members of the faculty, Mr. G. H. Chas. Klie and Dr. J. C. Falk.

Prof. Hemm reported his having turned over $241.50 to the treasurer of the college, this being the amount subscribed by alumni members to the college building lot und. The following new members were elected: G. H. Chas. Klie, St. Louis; Luther W. Marshall, Lexington, Mo.; Charles A. Lips, St. Louis; Fred. Wm. Schumacher, Waco, Tex. After transacting routine business the meeting adjourned. J. C. FALK, *Secretary*.

Kansas City.

OUR druggists think it best not to notice the patent-medicine boom which was brought out in our daily papers some days since. Beginning a fight through this channel would only entice the people into the cut-rate stores, while as it is the people have forgotten the agitation of this subject, and things are going on in the same old way.

One dry-goods firm still advertises patent medicines at cut rates, and up to date we have been unable to ascertain their source of supply.

Some druggists in the city still hold to the idea that Mr. A. Frank Richardson was handsomely paid by manufacturers to read his much-talked-of paper before the National Editorial Association, and say it is a stain upon the editorial ability of the members to allow such a paper to be read at the meeting.

Some papers throughout the country have made foolish comparisons of the cost of the druggist's "substitute" and the patent medicine, intimating that the former costs 25 cents, allowing a profit of 75 cents, while the proprietary article costs 75 cents, leaving a profit of only 25 cents. They ignore the fact that the proprietary medicine, including bottle, wrapper, label, contents, and flaming advertising, does not cost the manufacturer over 11 to 18 cents. It is the patent medicine which has established the custom of charging for drugs according to the size of the bottle, and if it should pass out of the trade today prices would soon be gauged according to the cost of the article, and not the size of the package. This would be a benefit both to the druggist and the customer.

NEBRASKA.

AT the examinations held by the Board of Examiners of the Nebraska State Board of Pharmacy, Lincoln, August 11th, Omaha, August 12th, and Kearney, August 13th, the members of the board—consisting of J. E. Riggs, Lincoln; Max Becht, Omaha; W. D. Haller, Blair; James Reed, Nebraska City; and Henry D. Boyden, Grand Island—were all present. The following is a list of the successful applicants who received their certificates as registered pharmacists in Nebraska, viz.: S. C. Beede, Surprise; Javan Biggs, Kearney; W. R. Bowman, Hay Springs; Julian Beach, Nashua, Ia.; John B. Bates, Verdigre; John U. Bodenmann, Omaha; E. P. Childe, Lincoln; H. M. Carson, Grand Island; W. T. Carson, Holstein; Butler Cooper, Arapahoe; Henry Clegg, South Sioux City; John S. Clark, Omaha; E. F. Dodd, Newport; Robt. E. Fenton, Omaha; Jno. H. Feltham, Silver City, Ia.; Walter L. Foote, Omaha; J. H. O. Green, De Witt; Chas. W. Gooden, Aurora; W. B. Howard, Lincoln; Albert J. Hoeppner, Holdrege; Niels P. Hansen, Oakland; H. L. Kindred, Herman; J. S. Livesay, Ceresco; W. A. Lee, Creighton; Wm. Nicholas Ley, Omaha; Peter O'Shea, Meadow Grove; Joe M. Park, Waterloo; Jas. A. Rossiter, Bancroft; Jas. A. Van Dyke, Benedict; J. S. Winston, Moorefield; C. Clayton Wentz, Omaha.

The next meeting of this board for examination of applicants for registration as pharmacists will occur at Lincoln, Neb., Wednesday, November 11th, 1891, in the Capitol building, at 9 A.M. sharp.

HENRY D. BOYDEN.